



## PROGRESS REPORT #2 AND FINAL REPORT – JUNE 22, 2020

Required by Corrective Action Plan  
City of Sheridan Wastewater Treatment System  
NPDES No. AR0034347



This document serves as Progress Report #2 and the Final Report for the Corrective Action Plan (CAP) dated February 7, 2020, which was required by the Arkansas Department of Energy and Environment (ADE&E), Division of Environmental Quality (DEQ). The CAP addresses effluent violations during recent years at the City of Sheridan (Sheridan) wastewater treatment system. As discussed in the CAP, Sheridan's efforts to improve compliance with the National Pollutant Discharge Elimination System (NPDES) permit limits are focused on addressing exceedances of fecal coliforms.

### Activities Since Previous Progress Report

The primary activity since the previous progress report (dated March 10, 2020) has been the effluent sampling, which was conducted as outlined in Section 2.3 of the CAP. Fifteen sets of split samples were collected and analyzed for fecal coliforms and *E. coli*. For each sampling event, one split was analyzed by Arkansas Analytical, Inc. (the same lab that has been analyzing Sheridan's effluent samples for many years; referred to as "Lab #1" hereinafter), and the other split was analyzed by Environmental Services Company, Inc. (referred to as "Lab #2" hereinafter). Both splits were collected from the same bucket of water. Each split was analyzed for fecal coliforms and *E. coli* using the IDEXX Colilert-18 method. This method has been approved by regulatory agencies and it is the method that both labs routinely use for fecal coliforms and *E. coli*. All analyses were conducted within the maximum allowable holding time.

### Sampling Results

The results of the sampling are listed in Table 1. The 7-day geometric means and 30-day geometric means of the measured data were well below the permit limits (all were less than 34% of the applicable permit limit). As expected with bacteria sampling, there was significant variability between different days as well as between splits.

Table 1. Effluent sampling results for City of Sheridan (units are colonies per 100 mL).

Date	Measured data for <i>E. coli</i>		Measured data for fecal coliforms		Calculated values for fecal coliforms		
	Lab #1	Lab #2	Lab #1	Lab #2	7-day geo. mean each calendar week	Highest 7-day geo. mean (for DMRs)	30-day geo. mean (for DMRs)
Fri 3/13/2020	43	499.5	27	913.8	157.1	157.1 2000	18.8 1000
Mon 3/16/2020	54	33.6	37	45.4	15.3		
Tue 3/17/2020	30	6.2	10	9.6			
Wed 3/18/2020	34	37.3	22	39.9			
Thu 3/19/2020	17	14.8	10	16.9			
Fri 3/20/2020	13	11.6	2	14.8			
Mon 3/23/2020	11	9.6	13	3.0	6.2		
DMR values for March: Permit limits for March:						<b>157.1</b> 2000	<b>18.8</b> 1000
Wed 4/01/2020	29	28.8	22	35.9	27.5	27.5 2000	27.5 1000
Thu 4/02/2020	22	13.3	22	19.8			
Fri 4/03/2020	17	1011.1	8	157.6			
DMR values for April: Permit limits for April:						<b>27.5</b> 2000	<b>27.5</b> 1000
Mon 5/18/2020	31	40.2	37	46.5	12.1	12.1 400	12.1 200
Tue 5/19/2020	< 2	4.0	< 2	4.0			
Wed 5/20/2020	< 2	2.0	2	19.0			
DMR values for May: Permit limits for May:						<b>12.1</b> 400	<b>12.1</b> 200
Thu 6/04/2020	96	67.1	46	111.1	67.4	67.4 400	66.7 200
Fri 6/05/2020	19	26.7	34	118.8			
Tue 6/09/2020	no data*	no data*	64	no data*			
DMR values for June: Permit limits for June:						<b>67.4</b> 400	<b>66.7</b> 200

\* Split sampling was not conducted on June 9th because the required 15 sets of split samples had already been collected.

The four highest values (499.5 and 1011.1 for *E. coli*, and 913.8 and 157.6 for fecal coliforms) occurred during March and early April. During April (after the three samples had already been collected), the water level in the holding pond was relatively low, allowing Sheridan personnel to notice that the grate covering the entrance to the discharge pipe was damaged and a small amount of debris had accumulated in the entrance of the discharge pipe. Sheridan personnel cleaned out the debris and installed a new grate in early May to prevent future accumulation. All of the samples that were collected after this event (i.e., all of the May and June samples) yielded low values for *E. coli* and fecal coliforms (i.e., less than 120). Because *E. coli* and other types of fecal coliform bacteria are known to attach to suspended or settled sediments, it is possible that bacteria could have attached to sediment particles within the debris, which could have affected the sampling results.

#### Status of Compliance (Final Milestone of CAP)

Based on the sampling results in Table 1, as well as DMR data for fecal coliforms during 2018 and 2019, Sheridan has achieved compliance with fecal coliform permit limits (the final milestone in the CAP) and does not anticipate future exceedances of fecal coliform limits.

Of the ten exceedances of fecal coliform limits that were listed in DEQ's request for a CAP, six of those occurred between December 2016 and May 2017; the only other months with exceedances were April 2018 and May 2019 (the 7-day geometric mean value in July 2019 was not actually an exceedance but was an error in the DMR calculations). The only time period during which exceedances occurred more than one month per year was December 2016 through May 2017, which was the first six months that the contract laboratory used the IDEXX method. Any analytical problems that may have occurred when the laboratory first switched to the new method appear to no longer occur.

At this time, Sheridan will not pursue a modification of the NPDES permit to switch from fecal coliform limits to *E. coli* limits. Compliance is being achieved with the existing fecal coliform limits; no further action will be pursued.